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**REGIONAL AND AGE-BASED PATTERNS OF MEDICAL  
ERRORS IN OBSTETRIC AND GYNECOLOGICAL PRACTICE: A  
RETROSPECTIVE ANALYSIS OF COMMISSION FORENSIC MEDICAL  
EXAMINATION REPORTS FROM UZBEKISTAN, 2020–2024**

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**Abstract**

**Objective:** To refine the forensic medical criteria for assessing defects in obstetric and gynecological care.

**Materials and Methods:** A retrospective analysis of commission forensic medical examination reports from the Republican Scientific-Practical Center of Forensic Medical Examination (branches in the Khorezm and Bukhara regions, the Republic of Karakalpakstan, and the city of Tashkent) was conducted for the period 2020–2024. A total of 150 commission cases were reviewed, of which 40 confirmed iatrogenic cases were selected for detailed analysis. Data were processed using Microsoft Excel 2007/2010, Microsoft Word, and STATISTICA for Windows. Descriptive statistical methods and Fisher's exact test were applied to assess regional differences.

**Results:** Among the 40 identified iatrogenic cases, errors occurred at surgical, therapeutic, diagnostic, and preventive stages of care. Regional distribution was as follows: Khorezm region (n=14), Bukhara region (n=6), Republic of Karakalpakstan (n=12), and Tashkent (city and region combined; n=8). Age distribution showed the highest frequency in the 31–40-year age group (n=18), followed by 21–30 years (n=12), 41–50 years (n=7), and 51–60 years (n=3). Regional differences were statistically significant according to Fisher's exact test ( $p < 0.05$ ).

**Conclusions:** Medical errors in obstetric and gynecological practice remain a clinically and forensically significant source of iatrogenic pathology. The highest incidence was observed in the 31–40-year age group, with significant regional variation. These findings highlight the need to strengthen professional training, ensure strict adherence to diagnostic and treatment standards, implement systematic monitoring, and conduct structured root-cause analysis to reduce iatrogenic events and improve patient safety.

**Keywords:** *iatrogenesis, medical errors, forensic medical examination, obstetrics and gynecology, Uzbekistan.*

### **Introduction**

Obstetrics and gynecology are among the most responsibility-intensive medical specialties. Errors at any stage—surgical, therapeutic, diagnostic, or preventive—can lead to severe complications, including maternal morbidity and mortality. Vascular complications such as postoperative mesenteric thrombosis may be catastrophic if not recognized promptly. Forensic medical examination provides a systematic framework to analyze such events, revealing both individual clinical mistakes and organizational shortcomings. Contemporary patient-safety guidance underscores the need for early identification and consistent evaluation of clinical errors, which has implications for both quality of care and medicolegal accountability. Building on these principles, this study analyzes the characteristics of iatrogenic events identified in commission forensic medical examinations across multiple regions of Uzbekistan.

### **Objective**

To refine the forensic-medical assessment criteria for defects in obstetric and gynecological care.

### **Materials and Methods**

**Study design and setting:** A retrospective review of commission forensic medical examination reports issued by the Republican Scientific-Practical Center of Forensic Medical Examination (branches in Khorezm and Bukhara regions, the Republic of Karakalpakstan, and the city of Tashkent) during 2020–2024.

Cases: A total of 150 commission cases were screened; 40 cases with confirmed iatrogenic events related to obstetric-gynecological care were included in the descriptive analysis. No separate control group was formed, as the focus was on characterizing the pathology rather than measuring deviation from a normative cohort.

Data collection and analysis: Extracted variables encompassed region, age group, and the clinical pathway implicated (surgical, therapeutic, diagnostic, or preventive). Data were processed in Microsoft Excel 2007/2010, Microsoft Word, and STATISTICA for Windows. We applied descriptive statistics and used Fisher's exact test to assess regional differences (significance threshold  $p < 0.05$ ).

Ethics: The analysis used archival, de-identified reports. Institutional permissions for working with anonymized forensic documentation were observed in accordance with local regulations.

## Results

A total of 40 iatrogenic cases were analyzed. Errors were associated with surgical, therapeutic, diagnostic, and preventive stages of care. Regional distribution was as follows: Khorezm ( $n=14$ ), Bukhara ( $n=6$ ), Karakalpakstan ( $n=12$ ), and Tashkent (city and region combined;  $n=8$ ).

**Table 1. Distribution of iatrogenic cases by region (2020–2024)**

Region	Cases (n)
Khorezm	14
Bukhara	6
Karakalpakstan	12
Tashkent	8

Age distribution showed a predominance in the 31–40-year group ( $n=18$ ), followed by 21–30 ( $n=12$ ), 41–50 ( $n=7$ ), and 51–60 years ( $n=3$ ). The detailed cross-tabulation by age group and region is provided in Table 2.

**Table 2. Age-group distribution of iatrogenic cases by region**

<b>Age group (years)</b>	<b>Khorezm</b>	<b>Bukhara</b>	<b>Karakalpakstan</b>	<b>Tashkent</b>	<b>Total</b>
<b>21–30</b>	2	1	4	5	12
<b>31–40</b>	7	3	6	2	18
<b>41–50</b>	3	1	2	1	7
<b>51–60</b>	2	1	0	0	3
<b>Total</b>	14	6	12	8	40

Regional differences in case distribution reached statistical significance by Fisher’s exact test ( $p < 0.05$ ), indicating that the observed pattern is unlikely to be due to chance.

### **Discussion**

This regional, age-stratified analysis of iatrogenic events in obstetric-gynecological practice highlights a concentration of cases among individuals aged 31–40 years and meaningful geographic variation across Uzbekistan. The findings align with international literature underscoring the multifactorial nature of iatrogenesis in Obstetrics and Gynecology care spanning surgical, diagnostic, therapeutic, and preventive domains. The data advocate for structured competency development, rigorous adherence to clinical guidelines, and continuous monitoring. Implementation of root-cause analysis frameworks in routine practice may help reduce event frequency and severity.

### **Conclusions**

Iatrogenic pathology in obstetric and gynecological practice is a persistent challenge. The marked clustering of events by region and age group underscores the need for targeted interventions: (1) enhancement of professional training and supervision; (2) strict compliance with diagnostic and treatment standards; (3) establishment of robust monitoring systems; and (4) routine analysis of error etiology with actionable

feedback into practice. Such measures can improve patient safety and overall quality of care.

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